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RELIGIOUS ANNIVERSARIES AT PARIS.

[From an American Correspondent of the N. Y. Observer.]

Paris, April 26, 1836.

Gentlemen—I send you a few particulars of the anniversaries in this city. In due time you will receive more ample and satisfactory details from your excellent French correspondent. The anniversaries closed this day, and have been of uncommon interest.

Christian Morals.

The first was the 16th annual meeting of the Society for the Promotion of Christian Morals, held in the Hotel de Ville, on Monday, the 18th inst. The society embraces in its number of members many Catholics, as well as Protestants. The Marquis of Rochefoucauld-Liancourt (a Catholic,) is the President, and on this occasion took the chair.

The annual report was read by Mr. Carnot. Then succeeded the reports of some five or six committees, on various subjects assigned to them. One was on the subject of prison discipline; another, on promoting industry among the people; a third, on orphan asylums; a fourth, on the encouragement of apprentices; a fifth, on the mode of instructing the blind, and meliorating their condition; a sixth, on religious liberty; and a seventh, on the abolition of punishment by death.

The seventh report was read by Mr. Lamartine, the distinguished poet of France. The execution of Morey, Papin, and Fieschi, and others, within a few months, has made many excellent people in France desirous that capital punishments should be abolished. Petitions are now getting up all over France, calling on the Chambers to abolish this mode of punishment; and the subject will soon come before that body. The Society for Christian Morals, some months ago, offered a premium for the best essay on the subject, and sixty-five essays were forwarded to the committee appointed to examine them. Their report on these essays was read by Mr. Lamartine, by whom it is understood to have been drawn up. It was an eloquent production, and though not such as to meet my views in all respects, yet it contained a very popular and even philosophical view of the subject. Considering that other modes of punishment of great severity may be inflicted in a country which possesses a well organized government, and especially considering the materialism, the infidelity, and the consequent disposition to commit suicide, which exist among this unhappy people, it would seem that the punishment of death might will be dispensed with and a more effectual one substituted in its place. But I confess that I have never yet seen how to dispose of the scriptural *injunction*, as I still must view it, on this subject. Would not Professor Stuart render essential service to the cause of humanity and truth, by making a thorough and decisive investigation of the original language addressed by the Divine Being to Noah, immediately after leaving the ark? I for one, and I think many others in this quarter of the world, would thank him for such a communication.

Tract Society.

On Tuesday night was held the anniversary of the Paris Tract Society. This society distributed, last year, more than half a million of tracts. It has printed 114 different French tracts, 14 German, and 11 Spanish. Professor Stapfer presided; and among other addresses, was one by the Rev. Dr. Malan, of Geneva.

Protestant Bible Society.

On Wednesday, the annual meeting of the Protestant Bible Society was held in the church of the Oratoire. Mr. Guizot, late Minister for Public Instruction, presided and addressed the meeting. He is a Protestant, and probably the ablest politician of France. The Protestant Bible Society is mostly in the hands of that portion of the Protestant church which is connected with the state. It has been in existence about eighteen years, and has undoubtedly accomplished much good. Its sphere of action is, however, entirely too limited for this day, and for the country in which it is situated. Hence another (the French and Foreign Bible Society) has been organized. The Protestant Bible Society distributed, last year, more than 5,000 copies of the Scriptures. Its income was about 20,000 francs. The Rev. Mr. Coquerel, among others, addressed the meeting.

Evangelical Society.

In the evening of the same day, the Evangelical Society held its third annual meeting, in the Taitbout street chapel. Admiral Count Ver Huell presided, and addressed the meeting. The report was read by Messrs. De Pressense and F. Monod; from which it appeared that last year there were employed 30 laborers—ministers of the gospel, evangelists, corpolteurs, and teachers—several chapels hired, nearly 10,000 Bibles and 70,000 tracts distributed, &c. Receipts of the treasury, nearly 40,000 francs. Grateful notice was taken of the aid received from the American Home Missionary Society. Addresses were delivered by the Rev. Messrs. Adolphus Monod, of Lyons; Morashe, of St. Denis; Vivien, of Versailles, and others.

Missions.

On Thursday, at noon, the Society for Evangelical Missions among the Heathen held its annual meeting, Admiral Ver Huell in the chair. Rev. Mr. Grand Pierre, Director of the Society's Mission House, read the report. The society has several missionaries in South Africa, upon whose labors the Lord is graciously smiling. Its receipts last year were more than 46,000 francs, and its expenditures upwards of 50,000. It is about to send out a reinforcement to aid the brethren whom it has in the field. The meeting was addressed, among others, by Rev. Adolphus Monod, and Mr. Grand Pierre; and such was the deep impression produced by the exercises of the occasion, that three pious young men came forward, at the close of the meeting, to offer themselves to become qualified as missionaries to the heathen.

French and Foreign Bible Society.

On Friday, at noon, the French and Foreign Bible Society held its third annual meeting. Prof. Stapfer presided, and opened the meeting with a discourse on the evil tendencies of the literature of the age, especially that portion of it which may be called French literature, and the remedy which is to be found in the Bible. The report was read by Mr. H. Lutteroth. The society put into circulation last year, more than 16,000 of the Sacred Scriptures. Its receipts were 43,000 francs, and its expenditures upwards of 69,000. It has been most assiduously engaged in preparing stereotype plates for French, German, and Spanish Scriptures. In the last named language it has commenced publishing the New Testament, through the aid of the American Bible Society. The society contemplates undertaking to supply every family, willing to receive it, in the city of Paris, with a copy of the Scriptures. In addition to the 21,000 copies of the Scriptures, in whole or part, circulated by the two French Bible Societies, 81,000 copies have issued from the Depository of the British and Foreign Bible Society in this city, making a total of more than *one hundred thousand* copies of the Sacred Scriptures put into circulation in France during the last year!

On Thursday, Friday, and Saturday evenings, there were social meetings of pastors from the departments, with their fellow christians of the city, at the houses of Messrs. Lutteroth, Pelet, and Wilks.

On Monday evening, the 25th, was a prayer meeting to beseech God to follow with his blessing the meetings which had been held.

The Rev. Mr. Monod, Sen. died on Friday night, the 22d April. This venerable man was the father of three excellent and faithful ministers of the gospel in this country, viz. Messrs. Frederick, William, and Adolphus Monod. Mr. Wm. Monod, who has been for several years prevented from preaching the gospel, by illness, is, I am happy to say, likely to be restored again to that blessed work. A younger brother is also preparing for the same high calling.

I am, yours, &c.

CHOCTAWS ON RED RIVER.

"In the Choctaw country, and in the churches on Red river, there has been, in the course of the past year, considerable attention to religion. About forty persons have united with two of our churches. Another church has been organized. In the Indian country, the monthly concert, weekly prayer meetings, and female prayer meetings, are all attended by the natives. The cause of temperance is much prospered. We rarely meet an intoxicated man in the Choctaw nation. There is a flourishing Temperance Society in Fort Towson, where preaching also is regularly attended. The Choctaws have not only become temperate, but industrious, and are enlarging their fields. They now derive their subsistence almost entirely from the cultivation of the earth. There is among them an increasing desire to be furnished with both English and native schools. As a people, they are improving. They have adopted a written constitution as the basis of their own civil government. They enact laws in council, and reduce them to writing in English."

From the Farmer and Gardener.

VIRTUES OF LIME AS A MANURE.

We mentioned last week the republication of the excellent essay on this subject, by M. Puvis, in pamphlet form, and promised to give the very able *introduction*, with which the edition is prefaced,—from the pen of Professor Renwick, of Columbia College, New York. It will be found below and will more than repay the reader for the time devoted to its perusal; for it is in truth a most luminious paper, replete with intelligence which every farmer should be in possession of. His explanations of the constituents of soils and the mode of action of lime, upon peculiar soils, are both so plain that none who wish to comprehend them can mistake their import. For ourself we are gratified to find gentlemen of Professor *Renwick's* distinction putting their shoulders to the wheel in support of the cause of agriculture, as, besides the brilliant lights which are thrown out by them, the influence of their names is of incalculable value. We should not omit mentioning that the public are indebted chiefly to *Jas. Wadsworth*, Esq. of New York for the edition of this excellent work.

"The chemical facts and principles which are applicable to agriculture, are neither numerous nor complete. They are, however, to be found only in works on general chemistry, in which they are intimately associated with laws and phenomena of a more abstruse description, and in connection with which they constitute a science of which the most learned are still students, and to attain which in its existing form may require years of close and attentive study. The language, too, of chemistry, which, to those who study it in a regular course, serves as an artificial memory, and single words of which call up long trains of thoughts and experiment, presents the uninitiated all the difficulties of a foreign tongue.

Yet it cannot be doubted, that the practical farmer may derive important benefit from acquiring so much of this language as will enable him to understand the chemical explanation of the numerous changes which are continually taking place in the natural actions which it is his high privilege to call into his service, to direct in part, and modify in degree. So also certain chemical elements and compounds, with the properties of which he ought to be acquainted if he wish to be able to direct his practical skill with more effect, even in circumstances familiar to him, but which may be absolutely necessary, or will at any rate save waste of labor and loss of time, when the knowledge acquired by practice in one place is to be employed in a new situation, and under a change of circumstances.

It is the object of this introduction to exhibit, in such a form as may be intelligible to those who have not made general chemistry an object of study, a concise view of such of the laws and and facts of that science, as are absolutely necessary for the agriculturist who may wish to improve his practice, and which are more particularly required by those who wish to avail themselves of the knowledge contained in the subjoined essay. To do this has been found no easy task. It would be in itself difficult, but to the author of this introduction has been more particularly so, as he has for years been in the habit of imparting instruction to those whose habits of life and thoughts are as remote as possible from those of the practical farmer; persons to whom the peculiar language of chemistry is an aid instead of an impediment, and who, with ample time at their command, have an opportunity of pursuing the study of the science step by step. Fully aware of these difficulties, both general and peculiar, this attempt would not have been made, and certainly not persisted in, had it not have been for the instances of an intelligent scientific and successful farmer, who has urged the completion of the task an an object likely to be beneficial to those, who, with perhaps equal zeal and native powers of mind, have not enjoyed, like himself, advantages of a scientific education.

The atmosphere which surrounds our earth is the first object to which our attention should be directed. This is the vehicle of the moisture, which, whether it fall in the form of rain or dew, run in streams or issue from springs, is absolutely essential to the success of the farmer's labor. It is also, as we shall presently see, important to him on other accounts.

The greater part of the atmosphere is made up of a mixture of substances, each of which has the same mechanical properties as the whole mass. These air-like substances are known to chemists by the name of *Gases*.

Of these gasses, two make up by far the greater portion of atmospheric air, and exist in it in the proportion of about 4 to 1. That which is the largest in quantity and makes up nearly 4-5ths of the whole atmosphere, is called, in the Essay of M, Puvis, by the name of Azot, but is more usually known in English by the name of Nitrogen.

This substance, although in the largest proportion, is the least important of the gases in its chemical effects. It does not aid in supporting the life of animals, nor in maintaining the burning (*combustion*) of inflammable bodies.

The part of the atmosphere which is absolutely necessary for these purposes, is called by the name of *oxygen*, and nearly makes up the remaining fifth part of atmospheric air. In its support of life it always, and in maintaining combustion often, unites with a chemical element, which is called *carbon*. This is familiarly known as forming the principal part of charcoal. In its union with carbon, oxygen forms a peculiar gas known by the name of carbonic acid.

Carbonic acid is always found in small quantities in the atmosphere, to which it is furnished by the breath of animals and the fumes of burning bodies. It is, when in considerable quantities, fatal to the life of animals, but is prevented from accumulating to an injurous extent in consequence of its being taken up by water; it is therefore dissolved, in proportions about equal to those in which it is formed, by rivers, lakes, the ocean, and the moisture of the soil.

Water exists in the atmosphere in the form of vapour. The great source of this vapour is the extended surface of the ocean, and it is governed by a mechanical law, by which it is continually tending to distribute itself uniformily over the whole surface of the earth. It may thus exist in as large quantities over the surface of the dryest land as over that of the ocean itself. The tendency to equal distribution is continually counteracted by the changes in the sensible heat (*temperature*) of the atmosphere, and of the surface of the earth, which follow the alterations of day and night, and the vicissitudes of the seasons. By these alterations and changes, the vapour is caused to fall (*precipitated*) in the form of rain, snow, hail, dew, or white frost, according to circumstances. As such changes of temperature are more frequent on the land than on the ocean, the water which falls on the former in either of these forms is greater in quantity than that which falls on equal surfaces of the latter. Thus by a wise and benevolent Providence, the water of the ocean is continually furnishing vapour, which is precipitated on the land for the support of vegetation and the supply of springs, and whose excess is poured back into the ocean in streams and rivers.

Water has been found by chemists to be a compound substance, made up of two elements. One of these, which forms 8-9ths of its weight, is the gas already mentioned under the name of oxygen; the other, a peculiar gas, known by the name of *hydrogen*.

Hydrogen, when free, is the lightest of all known bodies, rising and floating in atmospheric air; it not only combines with oxygen, to form water, but with carbon to form a great variety of compounds—gaseous, liquid, viscid, and solid. It also combines with nitrogen, and forms a gas known by the name of ammonia, which is well known by the peculiar smell it gives to spirits of hartshorn (*liquid ammonia.*)

Hydrogen also combines with sulphur, forming a gas known by the name of sulphuretted hydrogen; this exists in the atmosphere, but in such small quantities as only to be detected by the nicest chemical tests. It combines in like manner with phosphorus, forming phosphuretted hydrogen gas, whose presence in the air is occasionally perceptible.

Oxygen, as we have seen, unites with carbon, to form a gas which we have called carbonic acid.

This receives the latter part of its name from its similarity in properties to an extensive class of compound bodies, known by the name of *the acids*. The greater part of these, like carbonic acid, are combinations of inflammable bodies with oxygen. The most important of these in reference to our present object, are the sulphuric and phosphoric acids; named from the two substances (sulphur and phosphorous) which are their basis. Muriatic acid may also be mentioned here although its composition is of a different character. Oxygen unites with other bodies to a class of compounds known under the name of oxides.

The acids unite with earths, alkalis, and metallic oxides, to form a class of compounds known under the general name of salts.—These are named from the two substances which enter into their composition: thus, the salt formed of sulphuric acid and the earth lime, is called sulphate of lime. The substances which unite with acids to form salts, are called the *basis* of the respective salts.

Of these bases, the alkalis, it is only necessary to know the names of two, namely, *potassa* and *soda*, and to be aware that their distinctive properties are: to possess an acrid taste, a caustic operation, to render oils capable of mixing with water, and to neutralize the properties of acids.

The earth which the chemists call by the name of silex or *silica*, is found almost pure in flint and rock chrystal; it is also almost pure in sharp colourless sands, and is by far the larger part of sands of every description. So far as the farmer need know its properties: it is hard, rough to the touch, has no attraction for water, which it permits to filter through, or evaporate from it, with the greatest ease. It is capable of uniting with the other in compounds which are called silicates, and is the only earth which enters into the formation of soils uncombined with the others or with other elements.

The earth which chemists call by the name of *alumina*, is so named because it is obtained by them in a pure form from the well known salt called alum, of which it is the basis. Its most marked characteristic is plasticity: that is to say, it may be formed into a paste with water, will then easily receive any form which may be given it, and retain that form unaltered, even by violent heat. It never exists in soils unmixed, but in intimate association, or more probably chemical combination with silicia, it is the well-known substance called clay, or argillaceous earth. White clays are this combination nearly pure, and colored clays often contain it with no other addition than metallic colouring matter. Clay retains the plastic property of alumina; it therefore causes soils to be retentive of moisture; and when they dry, make them form tough clods or crusts, similar in character to sun-dried brick.

Soils which contain clay are often also mixed with sand, or with an excess of silicia in grains, which does not enter into the composition of the clay. Such a soil is less liable to form a tough crust than a pure clay, but it will require a very large proportion of sand to destroy this property altogether.

Clay mixed with sandy soils renders them more retentive of moisture. Sand and clay have therefore been used as manures for each other; but it may reasonably be doubted whether all the advantage that has been anticipated by some from this process, can be realized, as such a mixture will be merely mechanical.

Loamy soils are generally said to be mixtures of sand and clay; they undoubtedly usually contain both these earths; and even sometimes a large excess of sand. But we shall give reasons for believing that loams owe their peculiar value to a combination of clay with another substance, by which a change is produced in its chemical characters.

Lime is familiarly known by the same name that is generally used by chemists. It is obtained by the aid of heat from rocks which go by the name of limestones. These are combinations of lime with carbonic acid, which is fixed in them by chemical attraction, but which, when driven off by heat, takes the same form as the air of the atmosphere, or becomes a gas. This gas from this circumstance has been called *fixed air*, by which name it is often known when causing the sparkling and froth of cider and beer. The principal part of limestone is therefore called by chemists *carbonate of lime*. Carbonate of lime is also found in shells, both those of living animals and those which exist in the ground in a fossil state. In the former it is mixed with animal matter which is more or less separated since the death of the shell fish.

Marl, in the sense in which the term is used by chemists, is a mixture of clay with carbonate of lime. The English writers on agriculture have not observed this distinction, and the term is sometimes applied by them to a decomposed chalk, which may contain little or no clay: and sometimes to clay which contains no carbonate of lime. In fact, the name is frequently applied by them to any earthy matter found below the vegetable soil, which is capable of increasing its fertility. From this misapprehension, the substances which go by the name of marl in New Jersey, Maryland, and Virginia, do not correspond with the chemical definition, but are generally beds of fossil shells mixed in various proportions with earthy and saline matters of various kinds.

Lime is a substance very different in its characters from the two earths of which we have previously spoken. When prepared by heat from any of the original forms of its carbonate, it retains their shape unaltered, but may have its color changed, and always loses considerable in weight. It is now acrid, caustic and corrosive, and alkaline. Of these the most important is, that it unites with acids to form compounds included in the general class of salts. Of the salts of lime which are important to the farmer, the three principal are: the *carbonate*, which, as we have stated, is found in lime-stone, chalk, and marl; the *sulphate*, in which lime is combined with sulphuric acid, and which in combination with water is the substance so well known to our farmers under the name of plaster of Paris, or less familiarly by that of gypsum; the *phosphate*, which constitutes a part of the bone of animals.

Lime, when exposed to the air, attracts carbonic acid, which is always to be found in the atmosphere; it thus passes back to the state of carbonate, but in so doing gradually falls to powder, and is then said to be *air-slaked*. If slaked with water, it also falls to a powder, which still retains the caustic character of the burnt lime; but this powder, when exposed to the air, unites with carbonic acid more rapidly than when in mass.

Lime, in its caustic state, has the property of rapidly decomposing vegetable and animal substances, thus hastening the natural processes by which they are finally destroyed; or, to speak more properly, have their elements resolved into new combinations. The offensive and unwholsome gases which are given out by this composition, are absorbed by the lime, and probably by its other compounds; but in order that either this earth or its compounds shall manifest this property, they must be in small fragments, or, which is better, in fine powder.

Wet sand and plastic clay, and those soils to which they give their characters, also possess the property of absorbing gasses; but they have this in a very inferior degree to lime and its compounds. As the gases generated by the decomposition of vegetable and animal substances form a large part of the necessary food of plants, it is obvious that a soil which contains the carbonate of lime, may retain and store them up for use, while they will be lost in soils of a different character.

Carbonate of lime may also be made a most important article in the preservation of the most valuable parts of putrescent manures, until they can be applied to the soil. In this way marl is applied to a great extent in China; the night soil of their numerous population is there formed into cakes like bricks, with marl, and thus loses its offensive smell; but when these are applied as manure to the land, they give out the gases again as they are required for the nourishment of plants. So also in Norfolk, the site for dunghills is prepared by a layer of marl, which is incorporated with the manure from time to time, and retains the gases which would otherwise be lost.

Lime may therefore be applied in its caustic form in some cases in agriculture, for it will hasten the decomposition of animal and vegetable matters which might be otherwise inert; it will also neutralize acids, which experienced farmers well know to exist in many soils, which they in consequence call sour. But the latter purpose will be answered as well by the carbonate of lime, which may be applied as it exists in marl or shells, or as it may be prepared by grinding limestone. Caustic lime is also dangerous in its application, for it will corrode and destroy living vegetables, and hasten the decomposition of the vegetable matter of the soil to such a degree as to injure its fertility. Except upon turf bogs, & lands loaded with timber not wholly decomposed, quick or caustic lime ought not to be used; but to burn lime, and then by slaking to reduce it to the form of fine powder, which is speedily carbonated by exposure to the air, is a more ready, and generally a cheaper mode of obtaining the carbonate in a convenient form, than to grind limestone to powder in mills. Yet for many of the most valuable uses of lime in agriculture, the latter method, if as cheap, would answer as well.

Lime slowly combines with the earth silica, and produces a compound very different in character from either. It is this, to cite a fact in proof of our statement, which gives the sharpness and solidity to ancient mortar. The carbonate of lime will serve to form this compound: and thus, when it has time to act upon sand, it renders silicious soil more retentive of moisture: if applied to clay, by combining with its silicious matter it renders it more friable; and it is to the formation of this compound, by slow degrees, that we are inclined to ascribe the valuable mechanical properties of loamy soils, and the gradual amelioration produced by the use of lime, marl, and shells, as a manure.

Besides silica, alumina, and lime, an earth called magnesia is likewise found in some soils. It is also, in the form of carbonate, a frequent constituent of limestones. This earth has many properties in common with lime; like lime it is capable of neutralizing acids; and when deprived of carbonic acid by heat, corrodes vegetable substances. It probably also hastens putrefaction, and both it and its carbonate are capable of absorbing gases let lose in that natural process. It is, however, of little interest in agriculture, except as a part of some of the limestones which are used as manure. This, if applied in large quantities, is sometimes very injurious to vegetation; the reason of this is, that magnesia does not repass to the state of carbonate as rapidly as lime, and therefore contains its corrosive quality long after the lime has again become mild by its union with carbonic acid. In less quantities, however, the magnesia limestones may serve as a manure, but their application requires great caution, particularly when the quantity of magnesia amounts to twenty-five per cent.

All of the simple substances we have mentioned, except perhaps the last, either separate or in various states of combination exist in plants. The manner and character of the combination is influenced by the vital action of the plant which causes them to form compounds, often in direct opposition to the manner in which the ordinary laws of chemistry would direct. It thus happens that so soon as the plant ceases to live, these chemical laws being no longer inpeded, begin to avert their influence; and if it be in such a state as will admit of the several elements acting readily upon each other, a decomposition, more or less rapid, of the vegetable structure ensues. It is a law of chemistry, that its action is always aided by the bodies being in a fluid state, and the action is often impossible when the bodies are perfectly free from moisture. Hence the direct chemical action, and consequent decomposition, takes place with greater certainty and more rapidity in green juicy and succulent vegetables, than upon those which have been deprived of moisture either naturally or artificially. The grass, if heaped up in a recent state, decomposes, and if but partially dried, is heated, and may even take fire, by the chemical action of its elements; while, if dried by exposure to the sun and then laid up in a dry place in the form of hay, it is almost indestructible. A moderate degree of heat and access to air is also necessary to promote the chemical action by which decomposition is effected. This decomposition is often attended with motion among the parts; and always, if the mass has a liquid form: as in the expressed juice of vegetables, or in the steeps employed by stillers and brewers, it goes in general terms by the name of fermentation. When the vegetable matter abounds in starch, the first change is the conversion of this principle into sugar. Sugar, if thus formed, is next converted into alcohol, as it is, if previously existed in the plant. The presence of alcohol gives the liquid in which it exists the character of vinous liquors and if these are permitted to remain in a turbid state, a farther fermentation converts them into vinegar; and finally vinegar is farther decomposed, and the vegetable matter, giving out an offensive smell, is said to putrify. If the substance be not an expressed juice or liquid steep, these several stages of fermentation ensue with rapidity, may be going on at the same time, and are sometimes so speedy in their course that no other action but the putrefactive fermentation can be detected. Animal bodies are subject to the same laws, and go through the same stages of fermentation, but the rapidity with which they run into putrefaction is even greater; still there are some cases, as in that of milk, where the vinous stage can be occasionally, and the acetic distinctly, observed. Thus, a vinous liquor is prepared in some countries from milk, and the sour taste which appears in it when kept, arises from the presence of vinegar.

I the several stages of fermentation, parts of the vegetable assume the form of gas or vapour, and are given out to the air. The gases which have been detected, are carbonic acid, a gaseous compound of carbon and hydrogen, and in some instances ammonia. The vapour is that of water, which escapes in greater quantities than it would under ordinary circumstances, in consequence of the heat with which the process is attended. If exposed to rain, soluble salts, with earthy and alkaline bases, are washed from the mass. Finally, a mass of earthy consistence alone remains, which, on examination is found to be made of earth, insoluble salts, and carbon, being, in fact, identical with vegetable mould.

We may hence infer that the following elements exist in vegetable bodies: